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REVISION OF THE DIPTEROUS FAMILY THEREVIDÆ.

By D. W. COQUILLET, WASHINGTON, D. C.

In Osten Sacken's Catalogue of the Diptera of North America, four Therevid genera are credited to our fauna: *Psilocephala*, *Thereva*, *Xestomyza* and *Tabuda*. The genus *Xestomyza*, however, is not at present known to occur in our fauna, the single species heretofore referred to it (*X. planiceps* Loew) differing from it in so many important characters as to necessitate erecting a new genus for its reception; the principal differences are: the much shorter proboscis; the first posterior cell bisected by a crossvein, and the widely opened fourth posterior cell. The examination of quite a large series of specimens shows these characters to be constant, and for this new genus I would propose the name of *Metaphragma*.

Our genera, including a second new one, discovered by the writer, may be tabulated as follows:

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 1. First posterior cell entire, never bisected by a crossvein | 2 |
| First posterior cell divided by a crossvein into two cells; first antennal joint unusually large | Metaphragma , gen. nov. |
| 2. Head nearly twice as broad as long, vertical diameter of eyes nearly twice their horizontal diameter | 3 |
| Head not as broad as long, vertical diameter of eyes equalling their horizontal diameter, first joint of antennæ unusually large and polished | Nebritus , gen. nov. |
| 3. Face hairy | 4 |
| Face bare | Psilocephala . |
| 4. Third joint of antennæ at least two-thirds as long as the first | Thereva . |
| Third joint of antennæ one-third as long as the unusually large first joint, scarcely longer than broad | Tabuda . |

Metaphragma, gen. nov.

Head nearly twice as broad as long, eyes of male separated as widely as the two posterior ocelli; first antennal joint unusually robust, nearly as long as the head, nearly three times as long as the third joint, the latter only slightly wider than the second, destitute of bristles; style apical, distinct, two jointed; face very

oblique, greatly retreating below, pilose, especially on the sides; proboscis quite slender, nearly as long as the head, labellæ rather slender and as long as the proboscis proper; two submarginal and six posterior cells, the usual first posterior cell being divided into two cells by a crossvein situated midway between apex of discal cell and the wing-margin; fourth posterior cell wide open, the anal closed; pulvilli present, empodium bristle-like. (Name from the Greek, *meta*, between, and *phragma*, a partition. Type, *Xestomyza planiceps* Loew.

Nebritus, gen. nov.

Head depressed, slightly longer than broad, front nearly horizontal, vertical diameter of eyes scarcely greater than the horizontal, eyes of male separated more than twice as wide as the two posterior ocelli; first joint of antennæ unusually robust, as long as the head, twice as long as the third joint, the latter scarcely as broad as the second; *style wholly wanting*; proboscis quite slender, projecting nearly half the length of the head beyond the oral margin, labellæ rather slender, as long as the proboscis proper; palpi slender, sub-clavate, slightly shorter than the proboscis; face bare, greatly retreating below; two submarginal and five posterior cells, all of them open, the anal closed; pulvilli present, the empodium bristle-like. (Name from the Greek, *nebrilos*, like a fawn-skin.). Type, *Nebritus pellucidus*, sp. nov.

Nebritus pellucidus, sp. nov.

♂, ♀—Black, the proboscis, palpi, first antennal joint except the upperside, femora, tibiae, base of tarsi, halteres except the extreme apex, and tip of abdomen, yellowish; in the female the middle of the sixth, seventh and eighth abdominal segments at the base are black. Front on the upper three-fourths sparse black pilose and opaque yellow pollinose, excepting a median line and an ocellar spot; lower fourth of front highly polished, sometimes yellowish below, bearing a cluster of black pile at base of each antenna; first antennal joint highly polished, sparsely beset with black pile and bristles, the third joint bearing short bristles at the base; face yellow pollinose except the upper edge, extending as a large spot each side, polished black, a similar spot on each side of the oral margin near its posterior edge; occiput yellow pollinose except in the center, where it is gray, a large polished black spot back of upper corner of each eye. Thorax opaque, somewhat bluish pollinose excepting four nearly equidistant yellow pollinose vittæ which are beset with short yellow and black pile, elsewhere the sparse pile is black. Scutellum marked with two yellow vittæ beset with yellow pile; four marginal bristles. Abdomen opaque, lightly yellowish gray pollinose, the short pile on the basal half yellowish, that on the apical half largely black. Wings hyaline, the stigma yellowish. Length, 7 to 10 mm.

Southern California. Four males and two females, in April and June.

Psilocephala and Thereva. — Our species have been so recently tabulated by the writer (Can. Ent., 1893, pages 197—198 and 223—225) that it is quite needless to reproduce the tables in this place. In working up the rich material in the National

Museum, five undescribed species were found, which, with Dr. Riley's permission, are described herewith:

***Psilocephala limata*, sp. nov.**

♀—Black, the tibiæ, base of tarsi, and knob of halteres yellowish, narrow hind margins of the second and third abdominal segments, white. Front opaque, the upper half dark grayish-brown pollinose and black pilose, remainder of head white pollinose, lower half of front bare; pile of cheeks, occiput and abdomen (largely), white, that of the thorax and scutellum mixed black and white, scutellum bearing four bristles. First joint of antennæ scarcely wider than the second, the third nearly twice as wide as and slightly longer than the first; style one-fifth as long as the third joint. Thorax opaque grayish-black pollinose, two vittæ and the broad lateral margins light gray. Abdomen shining except the first segment, hind margins of the second, third and fourth, nearly crossing the segments on the lateral margins, and nearly the whole of the fifth and sixth segments. Wings hyaline, the stigma brown; fourth posterior cell broadly open. Length, 12 mm.

Colorado and Washington. Two females, from Dr. Riley's collection. Types in National Museum.

In my table of species referred to above this species would fall in with *morata* in couplet 4, except for the much shorter antennal style; it further differs by being nearly twice as large, by having the thorax vittate, etc.

***Psilocephala placida*, sp. nov.**

♀—Black, the antennæ, proboscis, palpi, halteres, femora, tibiæ, base of tarsi, venter and abdomen excepting the first segment and narrow bases of the three following ones, yellowish. First joint of antennæ nearly twice as wide as the second, the third joint slightly wider and a trifle shorter than the first; style one-third as long as the third joint. Front opaque, grayish-yellow pollinose and wholly black pilose. Short depressed pile of thorax, scutellum and first four abdominal segments, yellow, the longer, erect pile and bristles black; scutellum bearing four bristles. Wings pale smoky-brown, center of the cells usually nearly hyaline, stigma dark-brown, fourth posterior cell wide open. Length, 12 mm.

Florida. A single female from Dr. Riley's collection, now in the National Museum.

In my table this species would fall in with *slossoni* and *montivaga*, from both of which it differs in having no black spots on the front, the antennæ yellow, etc.

***Thereva egressus*, sp. nov.**

♂—Black, the tibiæ, base of tarsi, narrow hind margins of the second, third and fourth abdominal segments, and hypopygium (partly), yellowish. Head opaque, gray pollinose, pile of front and sides of face black, that in middle of face, on the cheeks, occiput, pleura, venter and the shorter pile of thorax, scutellum and abdomen largely yellowish or whitish, the longer pile of abdomen, thorax and scutellum

like the bristles of the last two, black. First joint of antennæ slender, much shorter than the head, but slightly wider than the second; third joint of nearly the same width and length as the first, tapering but slightly toward the apex; style one-sixth as long as the third joint. Thorax opaque, grayish-black pollinose, a darker median vitta, two vittæ and the lateral margins light gray. Abdomen opaque, brownish-black pollinose, except the first segment and hind and lateral margins of the others, which are gray. Wings whitish hyaline, the stigma and a broad border to the veins, brown; fourth posterior cell closed. All femora provided with bristles.

♀—Same as the ♂ with these exceptions: Front near its middle marked with a transverse pair of transversely oval polished spots; no black pile on sides of face; seventh and following abdominal segments shining. Length, 10 mm.

Colorado and California. Types in National Museum.

This species would fall in with *johnsoni* in my table, but in the latter the third joint of the antennæ is only three-fourths as long as the first, the thorax is yellowish and gray pollinose, the abdomen on the first six segments uniformly gray pollinose, etc.

***Thereva diversa*, sp. nov.**

♀—Black, the second joint of antennæ and base of the third, the palpi, femora, tibiae, base of tarsi, venter (largely) and broad hind margin of each abdominal segment except the first, yellowish; on the second segment this color occupies the last third and the lateral margins, the sixth and following segments are almost wholly yellowish. Head opaque, gray pollinose, a polished black spot in middle of front, separated from the eyes by pollen that in certain lights appears velvet-black; the polished spot is produced upward at its middle but is widely separated from the lowest ocellus; pile of front and of fourth and following abdominal segments largely black, that on the face, cheeks, occiput, thorax, scutellum and first three abdominal segments largely yellowish. First joint of antennæ scarcely wider than the second, the third equal in width and length with the first, tapering but slightly toward the apex; style one-sixth as long as the third joint. Thorax opaque, grayish-black pollinose, a median, pure black vitta, also two light-gray vittæ, the lateral margins of this same color; bristles of thorax and scutellum black. Abdomen, except the first segment, polished. Wings grayish-hyaline, stigma pale brown, veins narrowly bordered with brownish.

♂ differs from the ♀ as follows: Femora, except sometimes the apex, black; front destitute of a polished spot; pile of face sometimes partly black; abdomen sub-opaque, the yellow color less extended. Length, 9 to 11 mm.

Colorado, Montana and Florida. Four males and two females, from Dr. Riley's collection.

There appears to be no doubt that the two sexes here described belong together; the Colorado examples, two males and as many females, each bear the same kind of a label, and are pinned lower down than usual, indicating that they were taken by the same collector. In my table, the female would fall in with *flavicincta*, in which the polished frontal spot extends to the lowest ocellus and

the color of the abdomen is different; the male would fall in couplet 8, and then, in conjunction with the female, would stop at *frontalis*, which has the abdomen wholly black, or at most, with a very narrow yellowish hind border to some of the segments.

***Thereva nitoris*, sp. nov.**

♀ - Black, the tips of femora and base of tibiæ, reddish, balance of tibiæ dark piceus. Front opaque, the upper two-thirds grayish-black pollinose, the remainder light gray except a triangular velvet black spot next each eye at the junction of these two colors; pile on upper two-thirds of front and on proboscis black, that on the lowest third of front, on face, cheek, palpi and occiput, white. First joint of antennæ scarcely wider than the second, of the same width and length as the third; style one-third as long as the third joint. Thorax opaque, grayish-black pollinose, two sub-median vittæ and the broad lateral margins, light gray; the pile yellowish, the bristles like the four scutellar ones. black. Abdomen polished except the first segment, hind margins of the second, third and fifth, and a spot on each side of the sixth, which are whitish pollinose; pile on first three segments whitish, that on remainder black. Wings grayish hyaline, stigma and narrow border to the veins, brown; fourth posterior cell open. Length, 10 mm.

Missouri. A single female from Dr. Riley's collection, now in the National Museum.

This species would fall in with the last one in the table, *melaneura*, a Californian species unknown to me, described from a male specimen; the description by Dr. Loew, while omitting many important characters, still indicates too many differences to permit us to consider this species as being identical with the one described above.

A NEW ANTHRAX FROM CALIFORNIA.

By D. W. COQUILLET, WASHINGTON, D. C.

Since the publication of my recent paper on the Bombylidæ (Trans. Am. Ent. Soc., March, 1894), I detected a new species of *Anthrax* among some specimens submitted for names by Mr. Wm. Beutenmüller. The species is a very striking one, owing to the bright, coppery color of the tomentum on the head and body. In the table of species given in the paper mentioned above (l. c., page 97) the present species would fall in with *catulina* except that the pulvilli are wanting; it further differs from the last named species by the front tibiæ being destitute of bristles, the brown of the wings filling less than one-fourth instead of nearly one-half of the fourth posterior cell, etc. Its description is as follows: